

30 November 1973

SUPERSEDING

MIL-L-45522(ORD)

16 November 1961

(See Section 6)

## MILITARY SPECIFICATION

LINKER-DELINKER, HAND, 7.62MM, M21A1

### 1. SCOPE

1.1 This specification covers one type of manually operated, link loading and delinking machine used for assembling M13 metallic belt cartridge links and 7.62mm cartridges to form flexible belts and for disassembling the cartridges from flexible belts.

### 2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

#### SPECIFICATIONS

|                                |   |
|--------------------------------|---|
| <u>Military</u><br>MIL-W-13855 | Weapons : Small Arms and Aircraft<br>Armament Subsystems, General Specification<br>For. |
| MIL-P-14232                    | Parts, Equipment and Tools For Army<br>Materiel, Packaging and Packing Of.              |
| MIL-I-45607                    | Inspection Equipment, Acquisition,<br>Maintenance and Disposition Of.                   |

#### STANDARDS

|                                |   |
|--------------------------------|---|
| <u>Military</u><br>MIL-STD-105 | Sampling Procedures and Tables For<br>Inspection by Attributes. |
| MIL-STD-109                    | Quality Assurance Terms and Definitions.                        |

DRAWINGS

U.S. Army Weapons Command

D7791394 - Linker-Delinker, 7.62MM, Hand: M21A1.

(Product drawings referenced In this specification form a part of D7791394. )

PUBLICATIONS

U.S. Army Weapons Command

P7791394 - Packaging Data Sheet for Linker-Delinker,  
7.62MM Hand: M21A1.

IEL11013156 - Index of Inspection Equipment Lists.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

**3. REQUIREMENTS**

\* 3.1 First article. Requirements for submission of first article shall be as specified in the contract (see 6.1). Unless otherwise specified (see 6.1), the first article shall include the pilot package (see 5.1).

3.2 Materials, construction and design. Linker-delinker shall conform to the materials, constriction and design requirements specified herein, on Drawing D7791394 and in MIL-W-13855.

3.2.1 Handle roller. The handle roller shall rotate without binding on the handle.

3.2.2 Stud roller. The stud roller shall rotate without binding on the handle stud and shall move in the camway of the bracket without binding.

3.3 Functioning. Linker-delinkers shall operate through their full range of travel without binding and shall be capable of linking or delinking 21 rounds of 7.62mm ammunition in one stroke. Testing shall be as specified in 4.5.3.2.

3.4 Marking. Linker-delinkers shall be marked in accordance with MIL-W-13855.

3.5 Workmanship. Workmanship shall be in accordance with MIL-W-13855.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality assurance terms and definitions. Quality Assurance terms and definitions used herein are in accordance with MIL-STD-109.

\* 4.3 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.4).
- b. Quality conformance inspection (see 4.5).

\* 4.4 First article inspection. The first article (initial production unit(s)) shall be submitted for inspection in accordance with the contract requirement (see 6.1). The first article shall be representative of the production processes to be used during quantity production. The first article shall be subjected to the quality conformance inspection specified herein, and such other inspection as is necessary to determine compliance with the requirements of the contract.

#### 4.5 Quality conformance inspection.

4.5.1 Inspection lot. Unless otherwise specified, the formation, size and presentation of inspection lots shall be in accordance with MIL-STD-105. Inspection lots shall be within the limitations of MIL-W-13855. Linker-delinkers shall be assembled from component parts that have met all inspection requirements specified herein.

#### 4.5.2 Examination.

\* 4.5.2.1 Component parts and concurrent repair parts. Examination of component parts and concurrent repair parts shall be as specified in the contract (see 6.1). Examination of these parts shall be accomplished prior to their assembly into the end item or submission for acceptance as repair parts.

\* 4.5.2.2 Linker-delinkers. Examination of linker-delinkers shall be as specified herein. The examination provisions should be applied at the earliest practical point in manufacture at which it is feasible to inspect for acceptance without risk of change in the characteristic by subsequent operations. Reinspection of these characteristics on the completed product is not required provided assurance exists that the characteristic has not been changed, degraded or damaged by subsequent manufacturing, assembly or handling and that adequate inspection records are maintained.

4.5.2.2.1 Classification of defects. Classification of defects and acceptable quality levels (AQL's) for examination in accordance with MIL-STD-105 shall be as specified herein and shall include the following provisions.

- a. The AQL's listed for each defect shall be applied to the individual defect, not to a group of defects.
- b. Examination for workmanship shall include examination for missing operations and the presence of nicks, cracks, burs, scratches, toolmarks, deformations or other signs of poor workmanship. Pieces shall be carefully compared with a specimen of known acceptable quality and shall conform to the requirements of 3.5.
- c. Where "Visual" is specified as the inspection method for dimensional inspection, the characteristic shall be either scaled or compared with a specimen of known acceptable quality that has been established as an inspection standard, for conformance to the requirements of the drawing.
- \* d. Where "Visual" is specified as the inspection method for protective coating, the coating shall be visually examined for completeness, uniformity in appearance and color, and for freedom from pits, corrosion, scratches, and worn or bare spots.
- \* e. Where "Visual" is specified as the inspection method for functioning assembly requirements, the assembly shall be visually examined for completeness and manually operated for functioning requirement.
- \* f. Where "SMTE" (Standard Measuring and Test Equipment) is specified as the method of inspection, the contractor may use any type of industry developed, commercially available, multi-usage equipment or special inspection and/or testing equipment approved by the Government.

4.5.2 .2.1.1 Bracket (Drawing C7791404).

| <u>Categories</u> | <u>Defect</u>  | <u>AQL</u> | <u>Inspection Method</u> |
|-------------------|--|------------|--------------------------|
| Critical:         | None defined.  |            |                          |
| Major:            | None defined.  |            |                          |
| Minor:            |  |            |                          |
| 201               | Physical requirement not met.  | 1.5        | SMTE                     |
| 202               | Functional roller slot undersize<br>(.625 plug gage shall travel<br>freely through entire roller slot) | 1.5        | visual                   |
| 203               | Workmanship not as specified   | 4.0        | visual.                  |

4.5.2.2.1.2 Linker-delinker, 7.62mm, hand: M21A1 (Drawing D7791394).

| <u>Categories</u> | <u>Defect</u>                                    | <u>AQL</u> | <u>Inspection Method</u> |
|-------------------|--|------------|--------------------------|
| Critical:         | None defined:                                    |            |                          |
| Major:            |  |            |                          |
| 101               | Missing or improperly assembled<br>parts ,       | 0.65       | Visual                   |
| Minor:            |  |            |                          |
| 201               | Missing or defective protective<br>coating.      | 1.5        | Visual                   |
| 202               | Missing or improper identification<br>markings . | 1.5        | Visual                   |
| 203               | Diameter plate securing holes.                   | 1.5        | Visual                   |
| 204               | Improper stud torque.                            | 1.5        | SMTE                     |
| 205               | Workmanship.                                     | 4.0        | visual                   |

4.5.3 Testing.

\* 4.5.3.1 Failure data. All tests shall be conducted on a complete linker-delinker. If test requirements cited herein are not met, acceptance of the linker-delinker shall be deferred and the contractor shall accomplish as applicable, the following actions:

- a. Conduct a failure analysis study perforating a dimensional physical and visual examination of the components which are suspected to be the cause of failure or malfunction.

- t. Evaluate and correct the applicable production processes and procedures to prevent, recurrence of the same defect(s) in future production.
- c. Examine linker-delinkers, partially assembled linker-delinkers, and components (including components and sub-assemblies at in-process or final assembly) to insure that material Containing the same defect is purged from the inventory and not presented to the Government for acceptance.
- d. Submit the results of the failure analysis and the corrective actions taken to the Government for review and approval prior to submitting a reconditioned lot or reconditioned linker-delinker for retest.

\* 4.5.3.2 Functioning testing. Each linker-delinker in the inspection lot shall be tested for Functioning (see 3.3) using the test method specified in 4.6.1. Failure of any linker-delinker to meet these requirements shall be cause for reelection and the contractor shall perform the corrective action specified in 4.5.3.1.

4.5.3.3 Component parts and concurrent repair parts testing. Raw material testing, part testing, and (Certification shall be as specified in the contract (see 6.1). This will include chemical analysis, physical tests of materials, tests of protective finishes, heat treatment and function of parts as applicable. These tests shall be accomplished prior to assembly of parts into the end item.

\* 4.5.3.4 Packaging examination and testing. Unless otherwise specified (see 6.1), the packaging examination and testing shall be in accordance with MIL-P-14232.

#### 4.5.4 Inspection equipment.

4.5.4.1 Acquisition, maintenance and disposition. Unless otherwise specified (see 6.1) responsibilities for acquisition, maintenance and disposition of acceptance inspection equipment Prescribed on the Index of Inspection Equipment Lists, Drawing IEL11013156 and for all Other inspection equipment required by applicable specifications, shall be in accordance with MIL-I-45607.

\* 4.5.4.2 Accuracy of standard measuring equipment. When commercial and modified commercial inspection equipment is used, it must be capable of repetitive measurements to an accuracy of 10 percent of the total tolerance of the characteristic being inspected.

#### 4.6 Test methods.

4.6.1 Functioning test. The linker-delinker shall be tested using Government standard 7.62mm dummy-inert cartridge and M13 links (see 6.1). With the handle stud in the forward camway of the bracket and the handle in the rearward position, a belt of 21 dummy cartridges shall be positioned with the links against the forward lugs of the cartridge guides and the loop openings facing upwards. The heads of the cartridges shall be facing the cartridge rammer with the outlet noses of the cartridges facing forward. The handle shall be manually brought to the forward position to strip the cartridges from the flexible belt. The handle shall be returned to the rearward position. The rammer shall be repositioned rearward so that the handle stud is in the rearward camway of the bracket. The 21 dummy-inert cartridges shall then be placed so that the heads of the cartridges are facing the cartridge rammer with the bullet noses of the cartridges entering the links. The handle shall be brought fully forward to force the cartridges into the links to form a flexible belt. The handle shall then be returned to the rearward position and the flexible belt lifted out and examined for completeness of linking. The linker-delinker may be secured for the above test.

#### 5. PREPARATION FOR DELIVERY

\* 5.1 Pilot pack. The pilot pack shall consist of a complete linker-delinker packaged in accordance with Packaging Data Sheet P7701394 for the level of protection specified in the contract (see 6.1), packed level C and forwarded in accordance with 3.1.

5.2 Preservation, packaging, packing and marking. Linker-delinkers shall be preserved, packaged, packed and marked in accordance with Packaging Data Sheet P7701394 for the level of protection specified in the contract (see 6.1).

5.3 Repair parts. Repair parts shall be preserved, packaged, packed and marked in accordance with the packaging data sheets or the requirements specified, and for the level of protection specified in the contract (see 6.1).

#### 6. NOTES

6.1 Ordering data. Procurement documents should specify:

- a. Title, number and date of this specification.
- b. Lists of drawings and specifications pertinent to the linker-delinker showing applicable revision dates.

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- c. Shipping instructions for first article and pilot pack (see 3.1 and 5.1).
- d. Examination and testing criteria for component parts and concurrent repair parts (see 4.5.2.1 and 4.5.3.3).
- e. Packaging examination and testing, if different (see 4.5.3.4).
- f. Responsibilities for acquisition, maintenance and disposition of acceptance inspection equipment, if different (see 4.5.4.1).
- g. Responsibilities for furnishing dummy ammunition and links and disposition (see 4.6.1).  
Selection of applicable levels of packaging and packing
- b. ( see 5.1 and 5.2).

\* 6.2 Unless otherwise specified (see 6.1 f), the contract should specify the application of MIL-I-45607 and MIL-C-45662 on the Management Control System Summary List, DD Form 1660.

\* 6.3 When warranted, the contract should specify the application of MIL-I-45208 on the Management Control System Summary List, DD Form 1660.

\* 6.4 Supersession data. This specification includes the requirements of Springfield Armory Purchase Description SAPD-256 dated 25 May 1964.

\* 6.5 The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last issue.

custodians:

Army - WC  
Navy - OS  
Air Force - 70

Preparing activity:

Army - WC

Project Number

4925-0021

Review Activities:

Air Force - 70  
Navy - OS

User Activities:

Army-MU  
Navy - AS, MC

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval  
No 22-R255

**INSTRUCTIONS** The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document DoD contractors, government activities or manufacturers, vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

## DOCUMENT IDENTIFIER AND TITLE

MIL-L-45523A, Linker-Delinker

## NAME OF ORGANIZATION AND ADDRESS

## CONTRACT NUMBER

## MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

## 1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A GIVE PARAGRAPH NUMBER AND WORDING

B RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

## 2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

## 3. IS THE DOCUMENT RESTRICTIVE?

☐ YES ☐ NO (If "Yes", in what way?)

## 4. REMARKS

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